

# WATER TESTING IN CANNABIS

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# Required Testing

- Water Activity
  - Defined by FDA
  - Used for Food Safety
  - Water activity is related to microbial growth
  
- Moisture
  - Labs using approximation methods
  - Different method for every lab
  - Not defined in detail
  - Data use unclear to workgroup

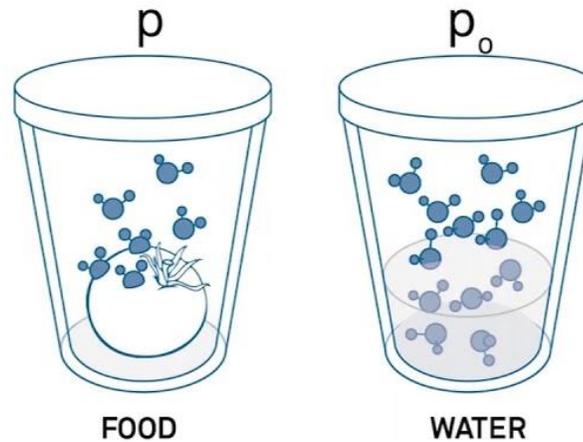
# Water Activity

## WATER ACTIVITY DEFINED

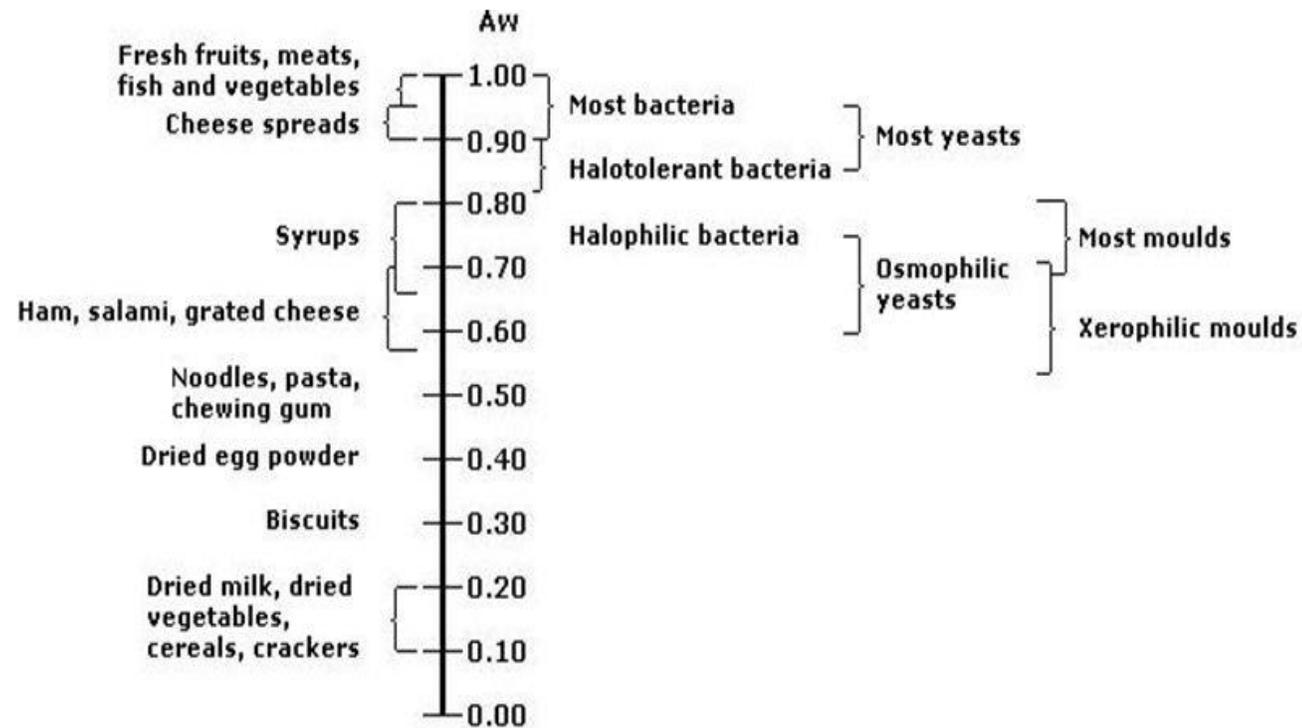
$$a_w = p/p_0$$

### Requirements

- Equilibrium
- Constant Temperature and Pressure



# ***Water Activity: Foods and Microbial Growth***



### Moisture content(%)

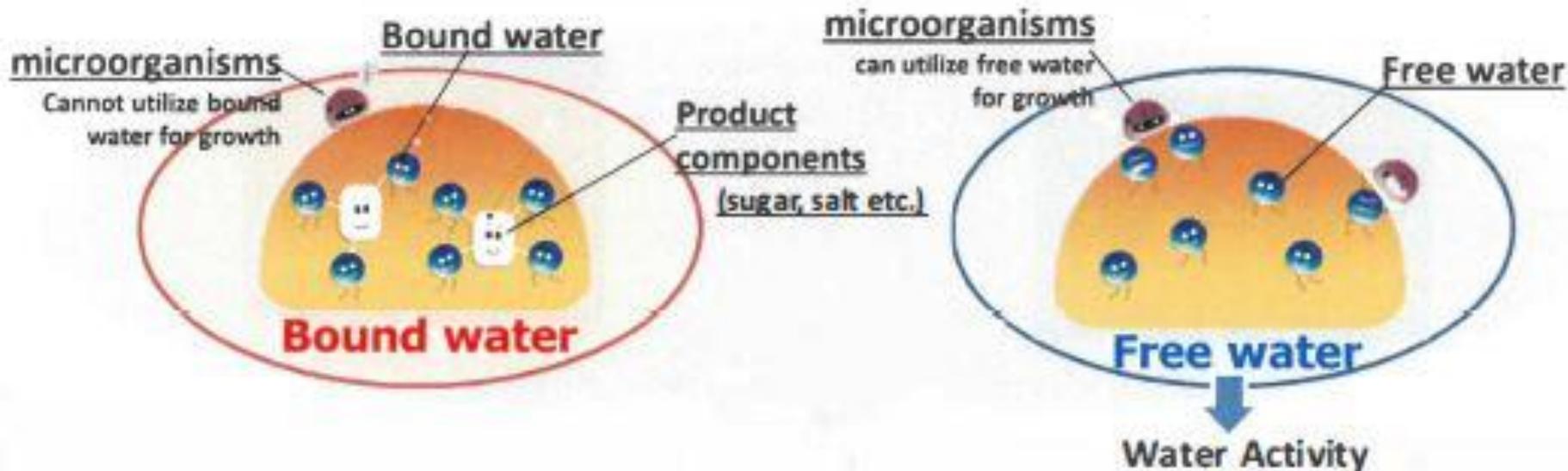
- Amount of **"bound" water** and **"free" water** in a sample.
- Quantitative amount of water in a sample.

Moisture content meter

### Water activity

- Amount of **"free" water** in a sample
- A measurement of the energy status of the water in a system (Qualitative)

Water activity meter: EZ-200



# Moisture Method - Loss On Drying

- Sample is dried and the % of lost mass is reported as “moisture”
- Most lab appear to be using some version of this
- Different dry times, temperatures, oven types affect results
- Does not detect all moisture and includes other compounds
- Easy to perform, inexpensive, commonly used in industry

# Moisture Test - Indirect

- Use math to convert water activity to moisture
- Uses assumptions about cannabis water content

# Moisture test – Karl Fisher

- Selective test for Water
- Can differentiate water from other volatile compounds
- No one uses this test
- Expensive
- Matrix issues

# Policy Questions

- Workgroup needs assistance with policy questions
- Most labs using scientifically valid methods.
- Should we allow the current process of each lab using it's own moisture method?
  - Methods have some biased against each other
  - Hard to accredit
- Alternatively can moisture be defined by policy, rule?
- Alternatively can the workgroup be provided policy reason for test, data use?
- Do we need both tests?